

ROLL THE DICE

TRANSFORMATIONS

- **STUDENTS WILL COMPLETE A SERIES OF 6 TRANSFORMATIONS BY COMPLETING DIFFERENT STATIONS OF THE RAINBOW ROLL THE DICE TASK**
- **ACTIVITY CAN BE DONE ON A POSTER OR ON A COORDINATE PLANE**
- **EACH COLOR OF THE RAINBOW HAS ITS OWN SET OF ROLL THE DICE RULES**
- **A GALLERY WALK CAN BE DONE AT THE END A FEW SAMPLE QUESTIONS ARE PROVIDED**



ROLL THE DICE

TRANSFORMATIONS

GROUND RULES

DETERMINE A RULE FOR EACH OF THE SCENARIOS

- **IF TRANSFORMATION WOULD SEND THE IMAGE OFF OF THE COORDINATE PLANE THEN ...**
- **IF TRANSFORMATION WOULD MOVE IMAGE TO A PREVIOUS LOCATION THEN ...**

ROLL THE DICE

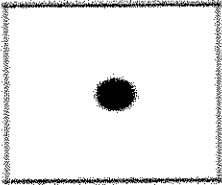
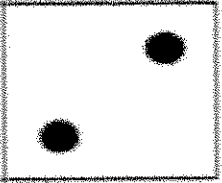
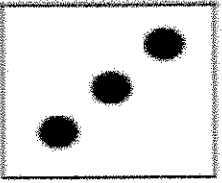
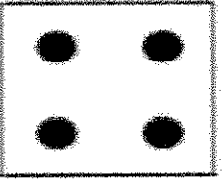
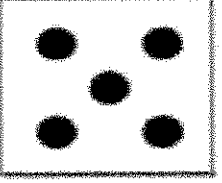
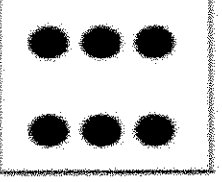
TRANSFORMATIONS

- ROLL 2 DIE TO DETERMINE THE COORDINATE POINT FOR THE TIP OF YOUR ARROW.
- DESIGNATE ONE DIE FOR THE X-COORDINATE
AND THE OTHER AS THE Y-COORDINATE
- YOUR ARROW CAN BE PLACED HORIZONTALLY OR VERTICALLY FROM THAT POINT
- TRACE YOUR ARROW ON THE COORDINATE PLANE IN BLACK
- YOU WILL GO IN ORDER OF COLORS OF THE RAINBOW
- ROLL 1 DIE TO DETERMINE EACH TRANSFORMATION
- TRACE THE ARROW IN IT'S NEW TRANSFORMATION POSITION WITH THE CORRESPONDING COLORED PENCIL
- TRANSFORM THROUGH THE RAINBOW
- COMPLETE THE PROVIDED WORKSHEET (ACTIVITY ASSESSMENT)

RED RULES

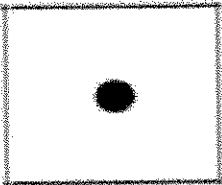
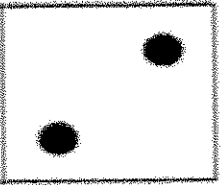
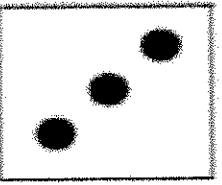
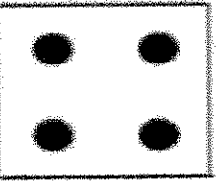
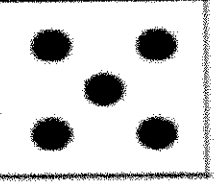
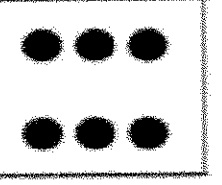
COMPLETE THE TRANSFORMATION WITH YOUR ARROW

TRACE THE ARROW IN RED

						REFLECT OVER THE X-AXIS	ROTATE 90 DEGREES CLOCKWISE AROUND THE TIP OF THE ARROW	ROTATE COUNTER- CLOCKWISE 180 DEGREES AROUND THE TIP OF THE ARROW	REFLECT OVER THE Y-AXIS	TRANSLATE 4 UNITS RIGHT AND 3 UNITS DOWN	TRANSLATE 5 UNITS LEFT AND UP 2 UNITS
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ORANGE RULES

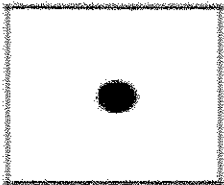
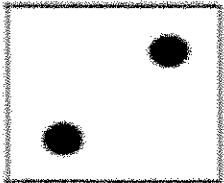
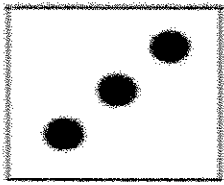
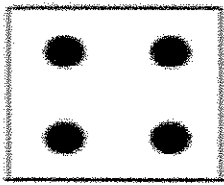
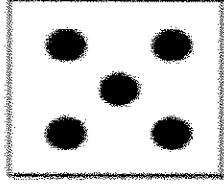
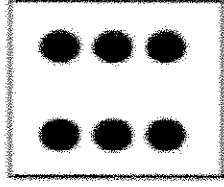
COMPLETE THE TRANSFORMATION WITH YOUR ARROW
TRACE THE ARROW IN ORANGE

					
TRANSLATE 4 UNITS DOWN	TRANSLATE 5 UNITS RIGHT	ROTATE COUNTER- CLOCKWISE 90 DEGREES AROUND THE TIP	REFLECT OVER THE HORIZONTAL AXIS	ROTATE YOUR ARROW 270 DEGREES CLOCKWISE AROUND THE TIP	REFLECT OVER THE VERTICAL AXIS

YELLOW RULES

COMPLETE THE TRANSFORMATION WITH YOUR ARROW

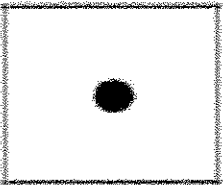
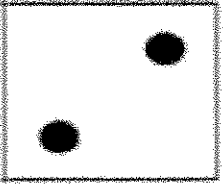
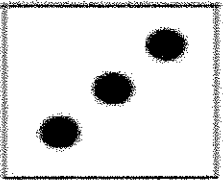
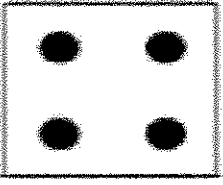
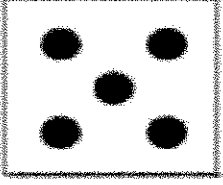
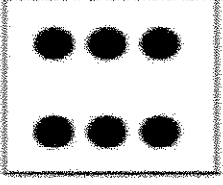
TRACE THE ARROW IN YELLOW

						TRANSLATE (X+2), (Y-1)
ROTATE 450 DEGREES CLOCKWISE AROUND THE TIP OF THE AAROW	REFLECT OVER THE Y AND TRANSLATE 2 UNITS TO THE LEFT	TRANSLATE (X-3, Y-3)	ROTATE 180 DEGREES AROUND THE TIP OF THE ARROW	REFLECT OVER THE X AND TRANSLATE 2 UNITS DOWN		

GREEN RULES

COMPLETE THE TRANSFORMATION WITH YOUR ARROW

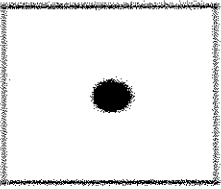
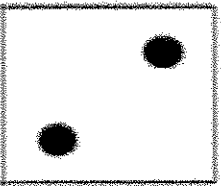
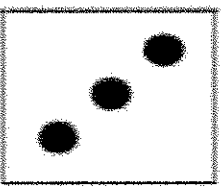
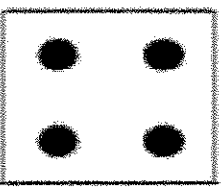
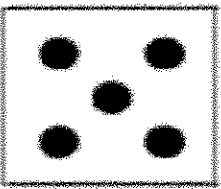
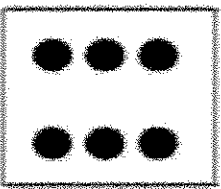
TRACE THE ARROW IN GREEN

					
TRANSLATE (X, Y+5)	TRANSLATE (X-2, Y)	TRANSLATE (X-5, Y+4)	TRANSLATE (X-1, Y+7)	TRANSLATE (X+3, Y-6)	TRANSLATE (X+1, Y+1)

BLUE RULES

COMPLETE THE TRANSFORMATION WITH YOUR ARROW

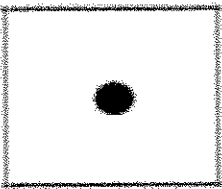
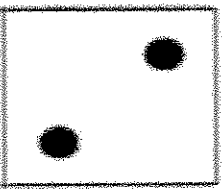
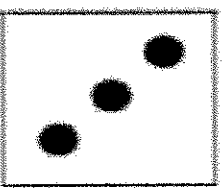
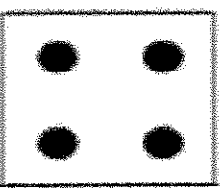
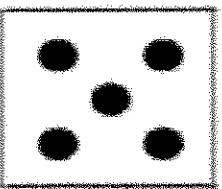
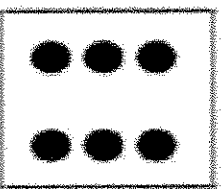
TRACE THE ARROW IN BLUE

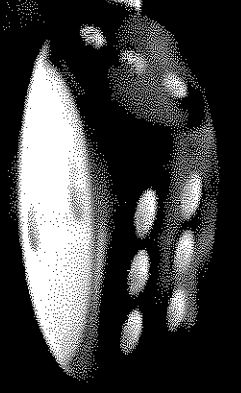
						ROTATE 90 DEGREES AROUND THE ORIGIN COUNTER- CLOCKWISE
						ROTATE 180 DEGREES AROUND THE ORIGIN
						ROTATE 270 DEGREES AROUND THE ORIGIN CLOCKWISE
						ROTATE 450 DEGREES AROUND THE ORIGIN COUNTER- CLOCKWISE
						ROTATE 630 DEGREES AROUND THE ORIGIN CLOCKWISE
						ROTATE 540 DEGREES AROUND THE ORIGIN COUNTER- CLOCKWISE

PURPLE RULES

COMPLETE THE TRANSFORMATION WITH YOUR ARROW

TRACE THE ARROW IN PURPLE

					
REFLECT OVER THE X-AXIS AND TRANSLATE 4 UNITS RIGHT AND TWO UNITS DOWN	REFLECT OVER THE X-AXIS	REFLECT OVER THE X-AXIS AND TRANSLATE 2 UNITS RIGHT AND 3 UNITS UP	REFLECT OVER THE Y-AXIS	REFLECT OVER THE Y-AXIS AND TRANSLATE 1 UNIT DOWN	REFLECT OVER THE Y-AXIS AND MOVE 5 UNITS LEFT



ROLL THE DICE

TRANSFORMATIONS

EXTENTION QUESTION EXAMPLES FOR GALLERY WALK

- **WHICH (POSTER'S) RED IMAGE MOVED THE FURTHEST FROM THE ORIGINAL BLACK IMAGE?**
- **DESCRIBE AT LEAST ONE SEQUENCE OF TRANSFORMATIONS TO MOVE FROM THE BLACK TO THE PURPLE IMAGE**
- **HOW MANY REFLECTIONS DO YOU SEE TAKE PLACE DURING THE SEQUENCE OF TRANSFORMATIONS?**
- **HOW MANY DEGREES DOES THE ARROW APPEAR TO BE ROTATED THROUGHOUT THE SEQUENCE?**